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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/685,202	10/10/2000	Martin Rofheart	195671US8	4316

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Arlington, VA 22202

EXAMINER

NGUYEN, HUY D

ART UNIT	PAPER NUMBER
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2681

DATE MAILED: 09/11/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/685,202

Applicant(s)

ROFHEART ET AL.

Examiner

Huy D Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 11-47 is/are rejected.
- 7) ☒ Claim(s) 8-10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) g.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-7, 11, 19-20, 22, 27, 29-32, 34, 36-39, 41, 43-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hershey et al. (U.S. Patent No. 5,878,034) in view of Ross (U.S. Patent No. 5,455,593).

Regarding claims 1, 11, 27, 34, 41, 43-46, Hershey et al. discloses a method for a ground station to determine when to send its information packets so as to arrive at the spacecraft at the beginning of a time slot. The calculation is based upon knowledge of the locations of the spacecraft and the transmitting ground station. The ground station determines the location of the spacecraft by the use of the propagation delays between the various ground stations (including itself) and the spacecraft [col. 2, lines 15-30]. Hershey et al. discloses the claimed invention except for transmitting and receiving information via UWB wireless medium. However, UWB systems are known in the art and characterized by their low probability of intercept and detection, multipath immunity, precision ranging and localization, and low cost. Ross teaches transmission via UWB [col. 3, lines 34-35]. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to transmit and receive information of Hersey et al. via UWB wireless medium as taught by Ross for precision and low cost.

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Regarding claims 3, 7, 19, 22, 29-32, 36-39, Hershey et al. discloses the method of claim 1, further comprising determining a distance from local device to remote device based on amount of time, wherein step of performing a function in local device comprises performing function based on distance determined [col. 2, lines 18-19].

Regarding claims 4-6, Hershey et al. teaches that the amount of time used to determine distance between the ground station and the spacecraft is taken between the transmission and reception times of the unique word, to form an estimate of the round-trip propagation delay between the ground station and the spacecraft. The one-way propagation delay is one-half of a difference, where the difference is that between the two-way or round-trip propagation delay and the inherent internal delay in the spacecraft loopback channel [col. 2, lines 60-66].

Regarding claim 20, the claim is the same as claim 1 except for a plurality of remote device. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to use the same method as in claim 1 for other remote device since it involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

3. Claims 12-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hershey et al. (U.S. Patent No. 5,878,034) in view of Ross and in further view of MPEP 2144.03

Regarding claims 12, 17, the combination of Hershey et al. and Ross teaches the claimed invention except for using triangular technique. The Examiner takes official notice that triangular technique is well known and commonly used in the art to locate an object. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to use triangular technique for convenience.

Regarding claims 13-16, 18, the combination of Hershey et al. and Ross teaches the claimed invention except for displaying a map including indicators that represent positions of various objects. The Examiner takes official notice that displaying a map including indicators that represent positions of various objects is used widely in GPS systems. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to use a display for displaying a map including indicators that represent positions of various objects since it provides visual aid.

4. Claims 2, 21, 28, 35, 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hershey et al. (U.S. Patent No. 5,878,034) in view of Ross and in further view of Leung (U.S. Patent No. 6,195,705).

Regarding claims 2, 21, 28, 35, 42, the combination of Hershey et al. and Ross teaches the claimed invention except for the MAC protocol. Leung teaches that MAC is a media-specific access control protocol within IEEE 802 specification [col. 22, lines 19-22]. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to perform the transmission of Hershey et al. and Ross under any suitable protocol, including MAC protocol as taught by Leung for standardizing to IEEE.

5. Claims 23-26, 33, 40, 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hershey et al. (U.S. Patent No. 5,878,034) in view of Ross and in further view of Upadhyay et al. (U.S. Patent No. 6,115,409).

Regarding claims 23-26, 33, 40, 47, the combination of Hershey et al. and Ross teaches the claimed invention except for the use of multi-element directional antenna. Upadhyay et al. teaches the use of multi-element directional antenna to optimize the SINR power ratio. It would

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have been obvious to one of ordinary skill in the art, at the time of the invention, to use multi-element directional antenna as taught by Upadhyay et al. to the system of Hershey et al. and Ross to optimize the SINR power ratio.

***Allowable Subject Matter***

6. Claims 8-10, objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Vannucci (U.S. Patent No. 6,381,464) teaches mobile location estimation in a wireless system using designated time intervals of suspended communication.
- Bogdan et al. (U.S. Patent No. 6,490,456) teaches locating a mobile unit in a wireless time division multiple access system.
- Cedervall et al. (U.S. Patent No. 6,011,974) teaches method and system for determining position of a cellular mobile terminal.
- Upadhyay et al. (U.S. Patent No. 6,115,409) teaches integrated adaptive spatial-temporal system for controlling narrowband and wideband sources of interferences in spread spectrum CDMA receivers.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huy D Nguyen whose telephone number is 703-305-3283. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne Bost can be reached on 703-305-4778. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-6750.

HTJ

  
**SINH TRAN**  
**PRIMARY EXAMINER**

August 26, 2003